Docket No.: 64254US(49991)
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
John C. Gebler, *et al.*

Application No.: 10/553,307 | Confirmation No.: 1965

Filed: August 7, 2006 | Art Unit: 1797

For: *AROMATIC PHOSPHONIUM SALTS AND THEIR USE AS LABELING REAGENTS IN MASS SPECTROMETRY ANALYSIS (as amended)* | Examiner: Xu, Xiaoyun

RESPONSE TO RESTRICTION REQUIREMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicants submit this paper in response to the Office Action mailed June 11, 2009 in the above-referenced patent application.

The Office Action sets forth a requirement for restriction and election prusuant to 35 U.S.C. §§ 121 and 372 of one of the following groups of claims that allegedly lack unity of invention.

Group I – Claims 1-3, 23, 24, 37, 41, 44, 46, 48-52, 56, 57, 65, 69-73, 77, 79 and 83-88 drawn to a method of preparing a sample for mass spectrometry analysis.

Group II – Claims 4-8 drawn to a method of preparing a sample for mass spectrometry analysis using at least two derivative reagents.

Group III – Claims 9-11, 15 and 16, drawn to a method of analyzing a sample.

Group IV – Claims 12, 13, 17 and 18, drawn to a method of analyzing a sample using at least two derivative reagents.

Group V – Claims 58-60 and 93 drawn to a composition.

Group VI – Claims 90 and 92, drawn to a kit for use in preparing a sample for mass spectrometry analysis.

Applicants elect Group I, claims 1-3, 23, 24, 37, 41, 44, 46, 48-52, 56, 57, 65, 69-73, 77, 79 and 83-88 drawn to a method of preparing a sample for mass spectrometry analysis.

In addition, the Office action sets forth a requirement for species election, pursuant to which Applicants must also elect one species from each of the following six (6) groups:

(1)

Ar group is selected from the group consisting of substituted or unsubstituted aryl groups (Claim 23).

Ar group is selected from the group consisting of substituted or unsubstituted heteroaryl groups (Claim 24).

(2)

The exposed group of the analyte is electrophilic and the reactive functional group is nucleophilic heteroaryl group (Claim 51).

The exposed group of the analyte is nucleophilic and the reactive functional group is electrophilic (Claim 52).

(3)

X^- is a halide, triflate, sulfate, nitrate, hydroxide, carbonate, bicarbonate, acetate, phosphate, oxalate, cyanide, aklylcarboxylate, N-hydroxysuccinimide, N-hydroxybenzotriazole, alkoxide, thioalkoxide, alkane sulfonyloxy, halogenated alkane sulfonyloxy, arylsulfonyloxy, bisulfate, oxalate, valerate, oleate, palmitate, stearate, laurate, borate, benzoate, lactate, citrate, maleate, fumarate, succinate, tartrate, naphthylate mesylate, glucoheptonate, or lactobionate (Claim 56).

X^- is an anionic Y group such that the labeling reagent is zwitterionic (Claim 57).

(4)

Ψ group is a haloalkyl, haloacetamide, halomethylbenzamide, a maleimido group, or a sulfonate ester, wherein the sulfonic acid is an alkylsulfonic acid, perfluoroalkylsulfonic acid, or an arylsulfonic acid (Claim 70).

Ψ group is an iodoacetamide, maleimide, or a halomethylbenzamide (Claim 71). 'P group is an isocyanate or an acyl nitrile (Claim 72).

Ψ group is an acyl azide, an acyl nitrile, an aldehyde, an alkyl halide, an amine, an anhydride, an aniline, an aryl halide, an azide, an aziridine, a boronate, a carboxylic acid, a diazoalkane, a haloacetamide, a hydrazine, an imido ester, an isocyanate, an isothiocyanate, a maleimide, a sulfonyl halide, or a thiol group (Claim 73).

(5)

The analyte is a protein, peptide, enzyme, immunoglobulin, hapten, antigen, amino acid, hormone, receptor, nucleic acid, hormone, chemical, polymer, pathogen, toxin, saccharide or polysaccharide, steroid, vitamin, therapeutic drug, drug of abuse, bacterium or virus, or a combination or fragment of any of the foregoing, or a metabolite thereof, or an antibody thereto (Claim 83).

the analyte is a food additive, agrichemical, surfactants, adhesives, resin, organic pollutant, or process chemical (Claim 84).

The analyte is a therapeutic drug or a metabolite thereof (Claim 85).

The analyte is a drug of abuse or a metabolite thereof (Claim 86).

(6)

The sample is rainwater, or water from an ocean, river, lake, pond, or stream; the analyte is a food additive, agrichemical, surfactants, adhesives, resin, organic pollutant, or process chemical (Claim 87).

The sample is a biological tissue (Claim 88).

The Office Action alleges that the various species enumerated about are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1. However, the Office Action has not set forth any reason why the various species lack unity of invention other that the unsupported statement. Accordingly, Applicants traverse the requirement for species election.

Applicants submit that the various species are so linked as to form a single general concept. For example, with regard to claims 23 and 24, the substituted or unsubstituted aryl groups (Claim 23) necessarily encompass substituted or unsubstituted heteroaryl groups (Claim 24). Heteroaryl groups are a type of aryl group inasmuch as they share the same aromatic electronic configuration as aryl groups. Accordingly, Applicants respectfully request that at least claims 23 and 24 be rejoined.

Nevertheless, Applicants elect subject to the foregoing traverse the following species:

(1)

substituted or unsubstituted aryl groups (Claim 23).

(2)

exposed group of the analyte is electrophilic and the reactive functional group is nucleophilic heteroaryl group (Claim 51).

(3)

X^- is a halide, triflate, sulfate, nitrate, hydroxide, carbonate, bicarbonate, acetate, phosphate, oxalate, cyanide, aklylcarboxylate, N-hydroxysuccinimide, N-hydroxybenzotriazole, alkoxide, thioalkoxide, alkane sulfonyloxy, halogenated alkane sulfonyloxy, arylsulfonyloxy, bisulfate, oxalate, valerate, oleate, palmitate, stearate, laurate, borate, benzoate, lactate, citrate, maleate, fumarate, succinate, tartrate, naphthylate mesylate, glucoheptonate, or lactobionate (Claim 56).

(4)

Ψ group is an acyl azide, an acyl nitrile, an aldehyde, an alkyl halide, an amine, an anhydride, an aniline, an aryl halide, an azide, an aziridine, a boronate, a carboxylic acid, a diazoalkane, a haloacetamide, a hydrazine, an imido ester, an isocyanate, an isothiocyanate, a maleimide, a sulfonyl halide, or a thiol group (Claim 73).

(5)

The analyte is a protein, peptide, enzyme, immunoglobulin, hapten, antigen, amino acid, hormone, receptor, nucleic acid, hormone, chemical, polymer, pathogen, toxin, saccharide or polysaccharide, steroid, vitamin, therapeutic drug, drug of abuse, bacterium or virus, or a combination or fragment of any of the foregoing, or a metabolite thereof, or an antibody thereto (Claim 83).

(6)

The sample is a biological tissue (Claim 88).

Claims 1-3, 23, 37, 41, 44, 46, 48-51, 56, 65, 69, 73, 77, 79, 83 and 88 read on the elected species.

If a telephone call to the undersigned would be helpful to resolve any remaining issues regarding the election and/or would expedite prosecution of the application, Applicants invite the Examiner to contact the undersigned at the telephone number listed below.

Applicants believe that no fees are required for entry and consideration of this paper. Nevertheless, Applicants authorize the Director to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to Deposit Account No. 04-1105, under Order No. 64254US(49991).

Dated: July 13, 2009

Respectfully submitted,

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